



**Texas Council on Cardiovascular Disease and Stroke  
Report for the 85<sup>th</sup> Regular Texas Legislative Session  
Heart Disease and Stroke in Texas**

Enacted by the 76<sup>th</sup> Legislature (House Bill 2085), the **Texas Council on Cardiovascular Disease and Stroke (TCCVDS)** is charged with developing an effective and resource-efficient plan<sup>1</sup> to reduce the morbidity, mortality, and economic burden of cardiovascular disease (CVD) and stroke in the State of Texas. The TCCVDS also makes written recommendations to the legislature, submits legislation, and/or comments on pending legislation that affects persons with CVD and stroke.



**Texas Heart Attack and Stroke Data Collection Initiative**

During the 83rd and 84th Regular Texas Legislative Sessions (Riders 97 and 67, respectively), funds were appropriated to advance heart attack and stroke reduction efforts throughout Texas. A portion of these funds were allocated to the Heart Attack and Stroke Data Collection Initiative. Funds were also allocated to the University of Texas System to implement the Lone Star Stroke Research Consortium. The Consortium’s

mission is to establish a state-wide network for patient-centered stroke research and therapeutic trials within Texas, linking academic health institutions with proven expertise in stroke research to community stroke centers.

Rider 97 FY 14-15 (2014-2015)	Rider 67 FY 16-17 (2016-2017)
<p>Funds were appropriated by the <b>83<sup>rd</sup> Regular Texas Legislative Session</b> to focus on <b>hospitalization</b> due to heart attack and stroke, with <b>preliminary exploration of pre-hospital burden</b>.</p> <p>Data collection <b>targeted only those hospitals who utilize the national registries: ACTION Registry-Get With The Guidelines and/or Get With The Guidelines-Stroke</b>. In addition, the <b>Regional Advisory Councils (RAC) provided some initial pre-hospital data</b>.</p>	<p>Funds were appropriated by the <b>84<sup>th</sup> Regular Texas Legislative Session</b> to continue focusing on <b>hospitalization, specifically in rural communities</b>, due to heart attack and stroke <b>as well as pre-hospitalization</b>.</p> <p>Data collection <b>targeted all hospitals in Texas: those who use national registries and those working with their RAC</b>. Data sharing was also made possible through the <b>state-mandated Texas EMS &amp; Trauma Registries</b>.</p>

In an effort to further guide implementation of the Initiative, DSHS formed the Texas Heart Attack and Stroke Data Collection Initiative Collaborative in April 2016, comprised of representatives from governor-appointed committees, state-mandated regional advisory councils, nonprofit organizations, and other pre-hospital and hospital stakeholders.

## Human and Fiscal Implications of Heart Disease and Stroke

- Heart disease and stroke are the **first and third leading causes of death in Texas.**<sup>2</sup>
- Approximately 1 in 17 adult Texans have heart disease (6.1%), and 3.0% have had a stroke.<sup>3</sup>
- For every 10,000 people in Texas, about 77 hospitalizations occurred annually for heart disease; and about 20 hospitalizations occurred annually for stroke.<sup>5</sup>
- In 2014, Texas EMS agencies reported seven percent of response runs among adults (75,950) were possible heart attack and one percent (11,734) possible stroke.<sup>4</sup>
- EMS data and hospital discharge data (see Figures 1,2,3,4,5,6) demonstrate significant gaps in Texas' capacity to prevent the human and financial impact of heart disease and stroke.
- Inpatient hospitalization charges for CVD (including stroke) were approximately **\$22.0 billion** in 2014.<sup>5</sup>
- Of the above inpatient hospitalization charges for CVD (including stroke), about **\$1 billion were Medicaid charges.**<sup>5</sup>
- Nationally, from 2011-2012, the average annual direct and indirect costs of stroke were estimated at \$33.0 billion total, and the average annual direct and indirect costs of heart disease were estimated at \$207.3 billion.<sup>8</sup>

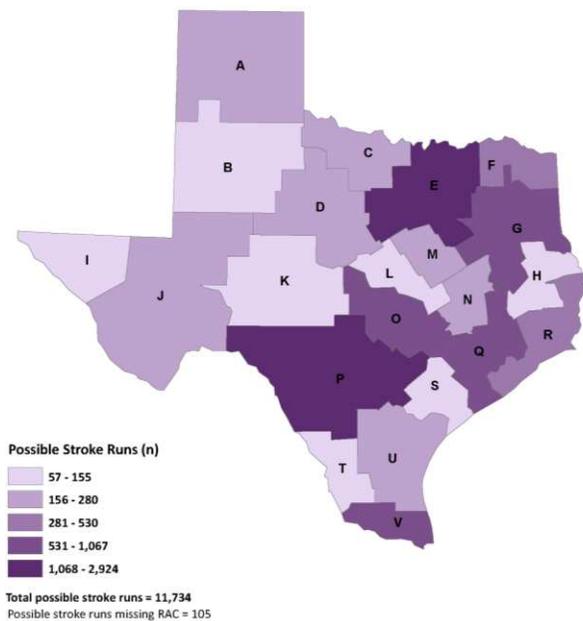


Figure 1: Total number of possible stroke runs by RAC, Texas, 2014.<sup>4</sup>

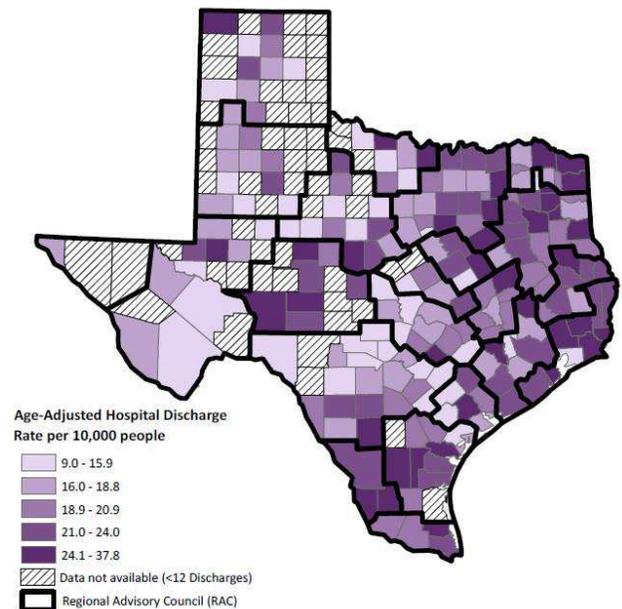


Figure 2: 2014 Age-adjusted Hospital Discharge Rates for Stroke.<sup>5</sup>

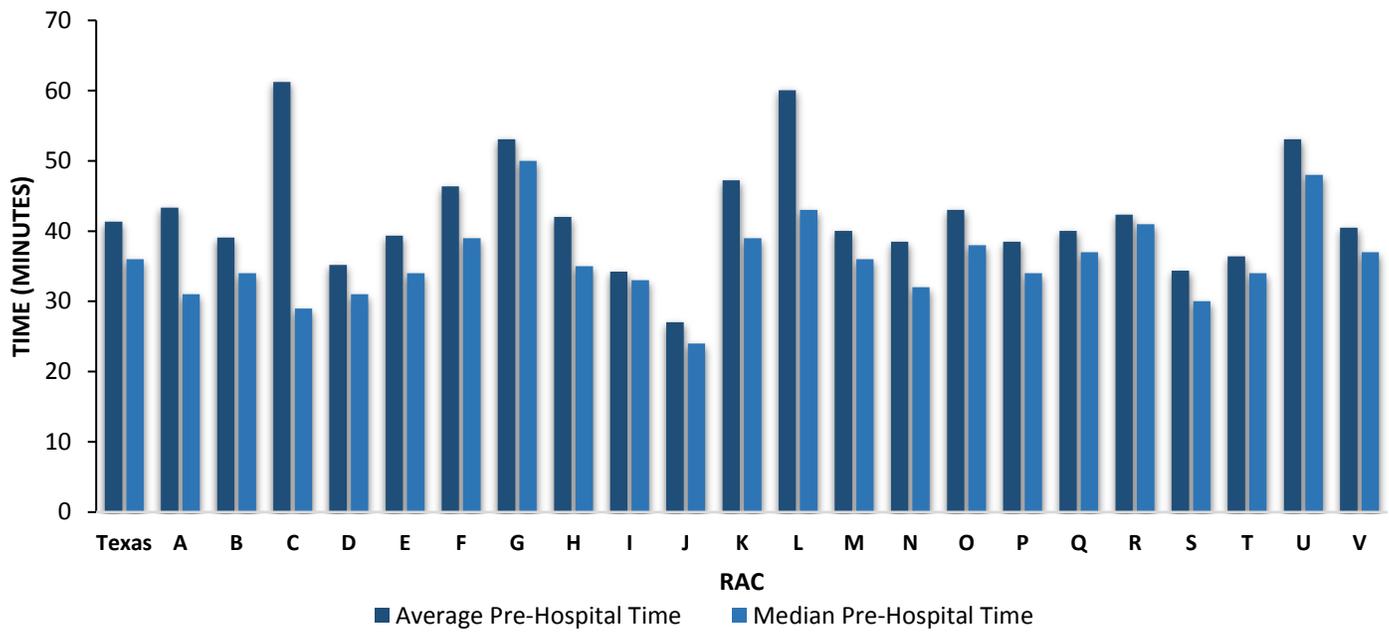


Figure 3. Total pre-hospital time among possible stroke EMS runs by RAC region of incidence and Texas overall, 2014.<sup>4</sup>

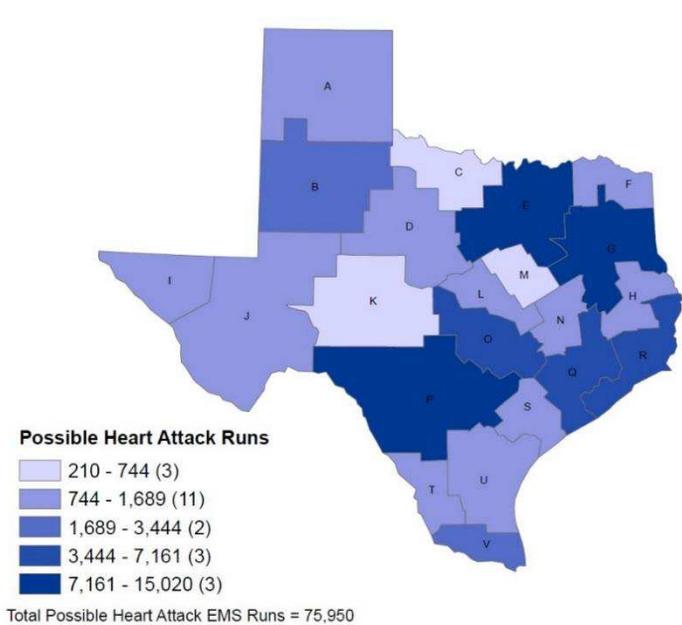


Figure 4: Possible Heart Attack EMS Runs by RAC Regions in Texas, 2014.<sup>4</sup>

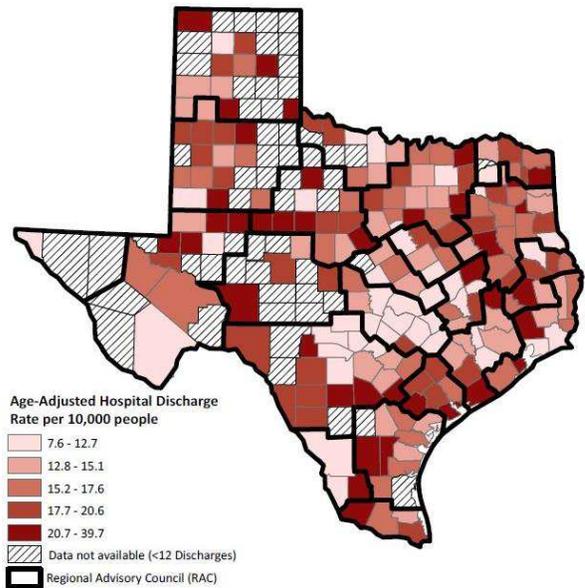


Figure 5: 2014 Age-adjusted Hospital Discharge Rates for Heart Attack.<sup>5</sup>

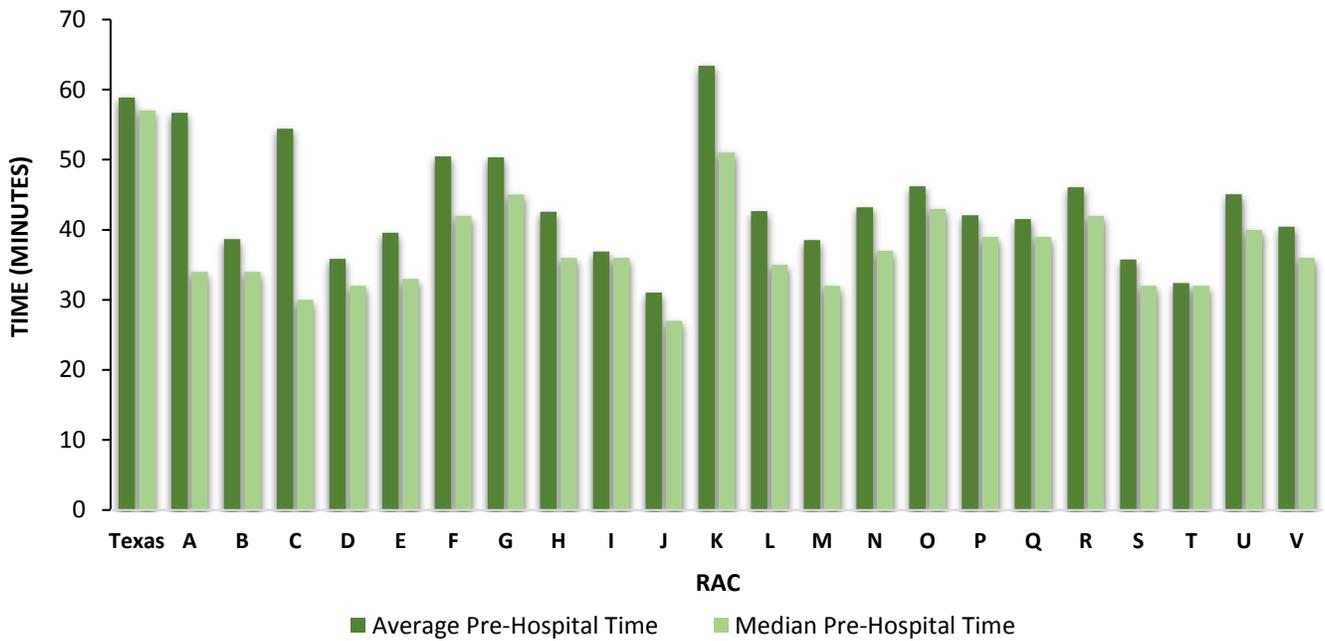


Figure 6. Total pre-hospital time among possible heart attack EMS runs by RAC region of incident and Texas overall. 2014.<sup>4</sup>

### Preliminary Findings and Opportunities

Initial reports and findings were completed with limited data from approximately 12% of eligible hospitals across Texas. Increased hospital participation will provide a more complete picture of heart attack and stroke data across Texas. Through the analysis of the data, the following opportunities were identified:

- Implementing transport referral protocols for cardiac and stroke patients improves outcomes. This results from more efficient care, ECGs and thrombolytics (clot busters) conducted sooner and early activation of cardiac/stroke labs.<sup>6,7</sup>
- Increase utilization of EMS transport instead of private transportation for heart attacks and strokes.<sup>6,7</sup> Patients transported by EMS are treated with appropriate measures sooner and have increased odds of favorable outcomes.<sup>6,7</sup>
- Increase advance notification and standardization of the use of EMS stroke alert protocols across all hospital systems.<sup>7</sup>
- Implement appropriate protocol on the use of ECG on cardiac patients in the EMS system. This can decrease the time before the patient receives appropriate intervention and treatment and improve the patient clinical outcomes.<sup>6</sup>

### **Rider 97: Accomplishments over the Biennium**

In FY 15, the DSHS Texas Heart Attack and Stroke Data Collection Initiative began data collection through targeted outreach and recruitment of hospitals who utilize national registries for their heart attack and stroke data. Hospitals were contacted and provided education about the Initiative and asked to participate. Participating hospitals were required to sign a data use agreement with DSHS and amend their existing contracts with national registry vendors in order for DSHS to access their de-identified data.

The Initiative saw many successes in FY14-FY15:

- Voluntary participation by a total of 52 hospitals; 32 hospitals contributed heart attack and stroke data, 15 hospitals contributed heart attack data only and 5 hospitals contributed stroke data only. Majority (96.15%) were located in urban counties.
- Availability of critical pre-hospital and hospital data points for heart attack/STEMI and stroke increased, which allowed TCCVDS to make data-driven recommendations on where resources needed to be directed in Texas.
- Preliminary exploration of pre-hospital data collection was made possible through the 22 RACs who oversee the trauma systems and EMS services across the state.
- Funding 22 RACs to facilitate data exchange, develop stroke transport plans and educate healthcare providers and the public on signs and symptoms of stroke.
- Funding University of Texas System to develop Lone Star Stroke Consortium, which has established five hub coordinating centers with four stroke centers per hub for a total of 25 participating research centers. Three research protocols have been approved, and new telemedicine connections are being established to reach patients in underserved areas.

### **Rider 67: Data Collection Expansion and Accomplishments To-Date**

Data collection through the national registries for heart attack and stroke continues. The expansion of hospital data collection, specifically for rural hospitals, was initiated in FY 16 through funding 22 RACs to collect specific heart attack/STEMI and stroke data points. Each RAC provided DSHS with de-identified, aggregated hospital data biannually for their region. Key findings from RAC-facilitated data collection will be available in FY 17.

The Initiative has already seen successes in FY 16-17:

- Voluntary participation increased from 52 to a total of 284 hospitals; 240 hospitals contributed heart attack data and 265 stroke data. Rural hospital participation has increased dramatically from 1.40% at the end of the last biennium to 66.43% currently.
- Collaboration with the DSHS Office of EMS/Trauma Systems Coordination to access de-identified heart attack and stroke pre-hospital data through the state-mandated Texas EMS & Trauma Registries.
- Continued funding of 22 RACs to assist with data collection, develop heart attack and stroke transport plans, and facilitate systems of care improvement efforts based on data analysis with their local EMS agencies and hospitals.

- Continued funding of University of Texas to manage the Lone Star Stroke Consortium, which now has 52 participating research centers and serves more than 7,000 Texans with stroke and cerebrovascular disease annually.

## Next Steps

To reduce the burden of heart disease and stroke and direct costs, DSHS will:

- Continue data collection and analysis of hospitalization and pre-hospitalization components of the heart attack and stroke systems of care;
- Continue outreach and education to all hospitals in Texas on the purpose of the Initiative and encourage their participation;
- Disseminate key findings and support regional efforts to improve heart attack and stroke pre-hospitalization and hospitalization care; and
- Continue collaboration and fostering relationships with stakeholders who have a vested interest in reducing the burden of heart attack and stroke in Texas.

## References

1. Texas Plan to Reduce Cardiovascular Disease and Stroke, 2013-2017. Accessed at <http://www.dshs.texas.gov/heart/pdf/TxPlans/2013-Texas-Plan-to-Reduce-Cardiovascular-Disease-and-StrokeMay2015.pdf> on August 11, 2016.
2. Texas Department of State Health Services, Vital Statistics Annual Report, Table 16, Leading Causes of Death (Total) Texas, 2014. Accessed at <https://www.dshs.texas.gov/chs/vstat/vs14/t16.aspx> on October 7, 2016.
3. 2015 Texas Behavioral Risk Factor Surveillance System, Center of Health Statistics, Texas Department of State Health Services.
4. Texas EMS & Trauma Registries (2014) Texas Department of State Health Services.
5. 2014 Texas Inpatient Hospital Discharge data, *Texas Health Care Information Collection (THCIC)*, Center for Health Statistics, Texas Department of State Health Services.
6. Texas STEMI/Heart Attack Hospital Performance Measures as prepared by the Office of Surveillance, Evaluation and Research, Health Promotion and Chronic Disease Prevention Section, Texas Department of State Health Services, July 2016.
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8. Writing Group M, Mozaffarian D, Benjamin EJ, et al. Heart Disease and Stroke Statistics-2016 Update: A Report From the American Heart Association. *Circulation*. Jan 26 2016;133(4):e38-60.